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# Topicalization in English and the Trochaic Requirement

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### 1 The loss of topicalization

The verb-second constraint (V2), which is at work in all other modern Germanic languages (e.g. Haeberli 2000:109), was lost in English in the course of the Middle English Period.

In other words: The usual word order in today's English is as shown in example (1). In earlier stages of English, however, one could also form sentences examples like (2a). This sentence shows V2: The verb is in second position, and is preceded by some constituent which can be something other than the subject. At a certain time sentences like (2a) became ungrammatical and were replaced by examples like (2b), which follow a new constraint, namely that the subject must precede the verb. Sentences like (1) are unaffected, but not because they observe the V2-constraint but because they happen to observe also the subject-before-verb-constraint.

- (1) John hates beans.  
(2) a. Beans hates John.  
b. Beans John hates.

This is a very well-known development (e.g. Kroch/Taylor/Ringe 2000). Less known – in fact, hardly noticed in the literature, as far as I know – is the following development: During the same time frame the rate at which direct object noun phrases are topicalized also declines, i.e. the proportion of topicalized sentences out of the total becomes smaller with time. Topicalization is not entirely lost - as V2 - but remains on a low level of usage until today.

'Topicalization' is defined in this paper purely syntactical, that is as movement of an element other than the subject to the left edge of the sentence (cf. Prince 1986:218). I thus subsume under this term the notions of topicalization in the more narrow sense, and focus-movement, among others.<sup>1</sup> The term in itself, as I use it, is meant to imply no function, especially

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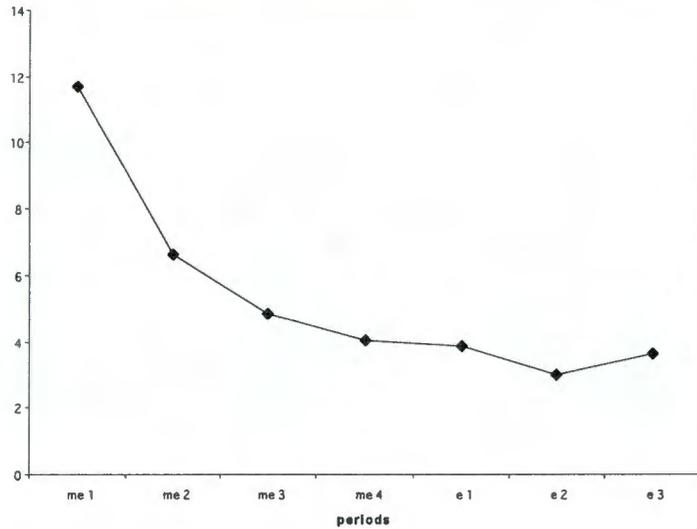
\*I wish to express my warmest thanks to Silvia Cavalcante, Rolf Noyer, Beatrice Santorini, Laura Whitton and especially Tony Kroch, without whose sharp observations this project never would have come into existence in the way it did.

<sup>1</sup>I did not distinguish between the subtypes topicalization and focus-movement in order to get a relatively large database for the third section of this paper. Although

not that of topicalhood in a pragmatic sense (to the problem cf. Chafe 1976:49f.; Prince 1999:3f.).

	me 1 (1150- 1250)	me 2 (1250- 1350)	me 3 (1350- 1420)	me 4 (1420- 1500)	e 1 (1500- 1570)	e 2 (1570- 1640)	e 3 (1640- 1710)
Total # of dir. obj.	4913	3009	8296	5897	2946	4147	3541
thereof topical- ized	575	199	400	239	114	125	128
%	<b>11.70</b>	<b>6.61</b>	<b>4.82</b>	<b>4.05</b>	<b>3.87</b>	<b>3.01</b>	<b>3.61</b>

Table 1: Decline of Topicalization



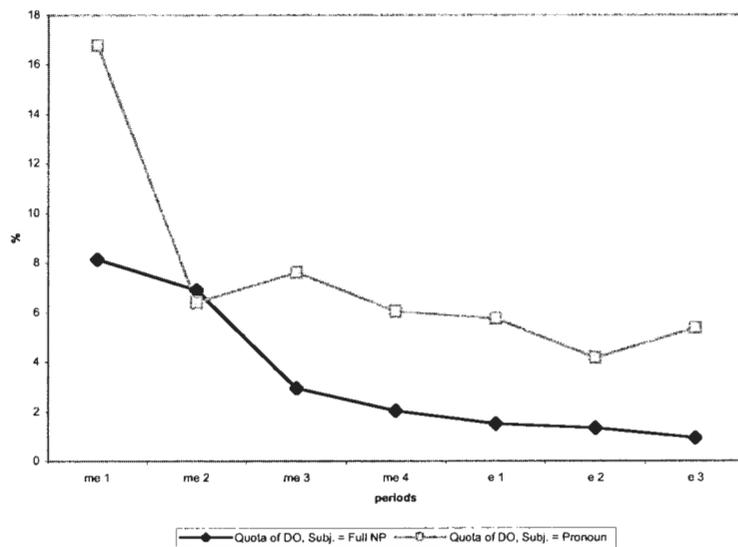
Graph 1: Rate of topicalization of direct objects over time

the distinction should be expected to be in some way relevant since these subtypes involve different accent patterns, it became clear that, at least for the current stage of research, the effects caused by these subtypes are so similar that they can be, for the most part, neglected. An issue, where the distinction does matter, is discussed in 3.3.

It is known that pronouns and full noun phrases in the subject position have different effects on word order. Let us look at sentences with pronoun subjects and sentences with full noun phrase subject separately.

	me 1 (1150- 1250)	me 2 (1250- 1350)	me 3 (1350- 1420)	me 4 (1420- 1500)	e 1 (1500- 1570)	e 2 (1570- 1640)	e 3 (1640- 1710)
Total # of DO, Subj. = full NP	2893	1260	4966	2939	1314	1698	1395
thereof topicalized	236	87	146	60	20	23	13
%	<b>8.16</b>	<b>6.90</b>	<b>2.94</b>	<b>2.04</b>	<b>1.52</b>	<b>1.35</b>	<b>0.93</b>
Total # of DO, Subj. = pronoun	2020	1749	3330	2958	1632	2449	2146
thereof topicalized	339	112	254	179	94	102	115
%	<b>16.78</b>	<b>6.40</b>	<b>7.63</b>	<b>6.05</b>	<b>5.76</b>	<b>4.16</b>	<b>5.36</b>

Table 2: Decline of Topicalization, split of full-NP-subject vs. pronoun-subjects



Graph 2: Rate of topicalization of direct objects over time, split as in Table 2

It should be noted, that the curve with pronoun subjects indeed behaves significantly differently than the curve with full noun phrase subjects: Whereas the latter clearly shows a continual decline, the former reaches after a jump between me1 and me2—which more or less reflects the transition from Old English to Middle English Grammar—a certain level and remains relatively stable on that level. I will return to that issue in section 3.1.

The main questions here are: Why should the rate of topicalization decline parallel to the loss of V2, and: Does this imply that they are connected, and if so: How are they connected?

The investigation must take some properties of topicalization into account: First: Different from V2, topicalization does not get lost entirely. It is still possible (e.g. (2b)), but less common than it used to be in Middle English. Second: Topicalization is generally done for pragmatic reasons. Since the conditions of language usage and the discourse requirements do not change over time, the decline in topicalization is surprising. The main question, on which I want to focus on, is: What is it about V2 that could affect topicalization? Since pronoun-subjects and full noun phrase subjects, it is close at hand to think of a prosodic factor.

## 2 The Trochaic Requirement

German and English have got similar accent patterns on the sentence level. That is to say: It is the same constituents that are accented, and the accent is phonetically realized in a similar manner. Since both languages are part of the West Germanic branch of the Germanic languages, thus relatively closely related, so it is not surprising that they share certain properties.

- (3) a. I arrived yesterday from **Washington**.
- b. Ich bin gestern aus **Washington** gekommen.
- (4) a. Do you **really** believe that there are **people** on the moon?
- b. Glaubst du **wirklich**, daß auf dem Mond **Menschen** wohnen?
- (5) a. On the **moon** there are by **no** means any people.
- b. Auf dem **Mond** wohnen auf **keinen** Fall irgendwelche Leute.
- (6) a. John is eating peas today, but **beans** John ate **yesterday**.
- b. Hans isst heute Erbsen, aber **Bohnen** hat Hans **gestern** gegessen.
- (7) a. John doesn't like peas, but **beans** John **likes**.
- b. Hans mag keine Erbsen, aber **Bohnen** **mag** Hans.

So it is conceivable to assume that the accent patterns of older forms of English (and German, for that matter) are similar, too, which will be important in due course.

In other words: Given the general character of Germanic intonation, the accent patterns in English and German are determined by certain discourse conditions. The discourse conditions under which certain contours arise are similar in German and English, and so are the contours themselves. So it is highly probable that the same contours were connected with the same discourse conditions also in older stages of English and German. Since it is not possible to determine accent placement *per se* in the texts, but since it is on the other hand possible to determine the discourse conditions which certain sentences are subject to, the obvious strategy is to watch in the texts for certain types of discourse which produce certain contours and take these type as indicator of the accent as it might have been produced.

It can be noted in examples (4) to (7a) that the accents are not adjacent, i.e. that there is a constituent in-between. One could ask what would happen if there is no constituent in-between.

Critical sentences are sentences which involve necessarily two accents, one of which is positionally determined. This is the case in sentences with a topicalized constituent (5-7). I confine myself throughout the paper to cases where the topicalized constituent is the direct object (6-7).

It is well-known that the use of topicalization is largely determined by reasons of information structure and serves, despite its name, rather not to establish a topic-comment structure but rather a focus-presupposition-structure (Prince 1986:208f.; 1999:6; diff. view: Reinhart 1981:10; Gundel 1985:86; 94ff.). The fronted constituent links back to an evoked set in the prior discourse, the relationship can be anything from contrasting the entity to the other entities to just resuming an old entity (Chafe 1976:49; Gundel 1985:97; Prince 1986:210), while the rest of the sentence expresses an open proposition (Prince 1986:208ff.; 1999:7ff.).

Let us now link this back to the problem of accentuation. Strongly simplified, we could summarize the problem as follows: The topicalized element contains a phrasal accent – a secondary or primary accent, depending on the discourse conditions – and so does the constituent in the open proposition, which marks the variable (Gundel 1985:88; Prince 1986:209; 1999:7; cf. also Zubizarreta 1998:37ff.). Crucial is here, that the topicalized constituent always ends up bearing some kind of accent; and this is just the problematic case which I came up with in the beginning of the paragraph. Whereas often these two accented phrases are divided by some other, unaccented phrase, they could, in principle, wind up adjacent to one another, as in (7b).<sup>2</sup>

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<sup>2</sup>I did not separate out cases of focus movement, which does not involve accent clash. These cases are generally rare, so that separating them out would alter the results at most slightly. I therefore decided to ignore this case.

To see what happens then, we take an example of these sentences from German as starting point and translate this sentence into English:

- (8) a. **Hans** hasst **Bohnen**. **Erbsen** hasst **Maria**.  
 b. **John** hates **beans**. **Peas**, **Mary** hates.

The German sentence is unobtrusive. The English sentence—the second one of (8b)—on the other hand is slightly awkward. In order to pronounce it one involuntarily makes a little break between the two accents. This looks as if—at least in English—a weak element between two accents is compulsory. Let us call this requirement ‘Trochaic Requirement’ (= TR).<sup>3</sup>

That the TR is at work at least also in German is borne out by sentence (7b), which requires also an empty timing slot or some other construction. (e.g. a resumptive pronoun, cleft-sentence etc.). Probably the TR is a property of all Germanic languages.

Formally one could capture the TR quite simply by means of autosegmental phonology. We could imagine the sentence prosody, which is beyond the usual prosodic hierarchy, as kind of a tier in the shape of e.g. the tonal tier (Leben 1973; Goldsmith 1976).<sup>4</sup> Now we know from autosegmental

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<sup>3</sup>A similar observation, namely that after the first accented element in a sentence a weak element must follow, was made by John Ries for *Beowulf* (1907:91ff). Whereas in *Beowulf* the TR could in theory be a reflex of poetic-metrical constraints, the presence of the TR in spoken Modern English shows that the TR works independently of poetry-inherent metrical considerations.

<sup>4</sup>There are several similarities between the tonal tier and accent. To give one example, the tonal tier can be anchored to different tiers, as syllable, segments, etc., just as accent (Leben 1973:11). I know that accent is usually not represented in autosegmental ways, but by means of the notion of foot (e.g. Hayes 1995), but I chose the autosegmental representation first because it is presumably more familiar, second because it is by no means clear whether the prosodic hierarchy continues to work in the same ways up to sentence level, and third because an autosegmental tier seems to me more powerful than the foot notion, especially since the facts observed can be understood as following directly from a principle which has been postulated for a different problem and proved independently. So the autosegmental representation of sentence accent has some conceptual appeal. I want to add that in the usual foot typology one could find a way for the TR to work just as well, as a colon-like (Hayes 1995:119) binary constituent on sentence-level which in English has to form a trochee and takes whole phrases as branches. That shows, that in advanced domains as that of sentence accent the differences between autosegmental and pedal representation become somewhat blurred, leading essentially to the same outcome, so that one is inclined to believe that, at least on that level, autosegmental

phonology that an important well-formedness constraint of a tier is the Obligatory Contour Principle (OCP):

Apart from special cases as root-features, on any level of phonological segmentation, i.e. on every tier, involving at least two features to be assigned, any two adjacent segments must be distinct.<sup>5</sup>

The form of the sentence-prosodic tier must consequently be something like this:

(9) (o) Ó o Ó o ...

If we assume (which is plausible) that the weak element cannot be left floating, we see that the TR is nothing more than the reflex of the OCP:

- (10) a. Ó o Ó || Ó o Ó  
 | | | | | | |  
 [Hans] [mag] [Bohnen]. [Erbsen] [mag] [Maria].
- b. Ó o Ó || Ó o Ó o ||  
 | | | | | | | | |  
 [John] [likes] [beans]. [Peas] —[Mary] [likes].

The comparison of (8a-b) reveals that the inversion in German is actually quite a handy way to avoid violation of the TR. Modern English, since it has lost the V2-constraint, has this option no longer available.

Speakers of Modern English have – among others – two options to fulfil the TR in sentences where the object should be fronted for discourse reasons: Either they use the last resort strategy of inserting an empty timing slot, thus creating a dummy weak element. Or they stop topicalizing and rely purely on the accent to mark the element in-situ for its appropriate discourse function. Since topicalization obviously declines over time, and cases where an empty timing slot is inserted are regarded as very marked, it is conceivable that the latter strategy—i.e. refrain from topicalizing—is the option which is chosen more often (cf. Gundel 1985:95).

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and pedal representations are just two different modes of expressing the same things rather than conflicting theories.

<sup>5</sup>A adapted from Goldsmith 1976: 36, with extract: it from Leben 1973.

### 3 The Trochaic Requirement in the History of English

#### 3.1 Pronoun subjects versus Full Noun Phrase Subjects

Now we are in a position to explain the different behaviour of the curves in Graph 2, taking into account that pronouns are per se phonologically weak elements. If the pronoun is after the verb, it is irrelevant to the TR as far as topicalization is concerned. Then it would be the verb that counts as the weak element. If it is true that the rate of topicalization declines because, as V2 goes away, the danger of producing a situation where accent clash is pre-programmed, and therefore the danger is bypassed by simply ceasing to topicalize, only cases where the subject is accentable at all should be really affected by that development. Pronouns are naturally weak elements. If a pronoun subject is present, the fulfilment of the TR comes for free, no matter if the subject and the verb are inverted or not. Therefore one would expect sentences with pronoun to behave more 'relaxed' with respect to topicalization, i.e. the subsequent avoidance of topicalization, in order to avoid any possible violation of the TR, should not affect sentences with pronoun subjects. And indeed, as becomes clear from Table and Graph 2, in these sentences the rate of topicalization, after an initial decline, remains stable.

#### 3.2 Accent Patterns with Full Noun Phrase Subjects

So there remains the problem of the decline of topicalization with Full-NP-subjects.

Middle English had still the possibility of following the V2-constraint. In order to avoid a violation of the TR, the strategy to exploit V2 can be taken as preferred to inserting of an empty timing slot, since it is structure-preserving. One would therefore expect that accent clash would not appear very often in Middle English texts.

In order to test that assumption I scrutinized all sentences with topicalized objects, full noun phrase subject and non-auxiliary verb taken from the Penn-Helsinki corpora of Middle English and Early Modern English.<sup>6</sup> Sentences with pronoun subjects and sentences with auxiliaries have been left aside. I separated these sentences out, depending on where the discourse would predict the placement of the second accent, i.e. the accent inside the open proposition. There are three possibilities:

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<sup>6</sup>Since the two Early Modern English bible translations, Tyndale and the Authorized version, feature problems of their own which are apt to blur the general picture I excluded these texts.

- on the constituent directly following the topicalized constituent  
(Pattern A: Q – 1 – 2 – X) (mod. ex.: 8b2)
- on the second constituent after the topicalized element  
(Pattern B: Q – 1 – 2 – X) (mod. ex.: 7a)
- on some constituent after that  
(Pattern C: Q – 1 – 2 – X) (mod. ex.: 6a)

Pattern A, inverted:

- (11) a. [**Gladne** zivere] [**luueþ**] [godd] (cmvices1,139.1731; m1)  
Joyful giver loves God  
b. [That] [**saw**] [kyng Claryvauns] (cmmalory,21.643; m4)  
That saw king Claryvauns

Pattern A, uninverted:

- (12) a. [Peose & **opre** earmþen ðe of wedlac a-wakeniþ;] [Seinte  
these and other grieves that of marriage arise St.  
**pawel**] [belukeþ] [in ane lut wordes] (cmhali,156.407; m1)  
Paul includes in one little word  
b. [**this** prayer][**all** our friends here][meke][with mee] (nferrar243.3;  
e2) this prayer all our friends here make with me

Pattern B, inverted:

- (13) a. [**swiche** teres] [scedde.] [M. **Magdalene**] ... [**swiche** teres]  
[scedde]  
such tears shed M. Magdalen such tears shed  
[ure **drihten**] ... (cmlamb1,157.478; m1)  
our Lord  
b. [**That** thing] [knowe] [**all** men] [euer since ye overthrewe...]  
That thing 'know all men ever since you overthrew  
(udall,L97.129; e1)

Pattern B, uninverted:

- (14) a. [Perne **uridom**] [þe man] [**benymp**] [him-zelue] [in grat del.]  
Of-this freedom the man robs himself in great part  
'The man robs himself of this freedom for good.' (ayenbi,86.1678;  
m2)  
b. and therefore [**this**] [the Apostle] [**urges**] [for his] (jetaylor,24.297;  
e3)  
and therefore this the apostle urges for him

Pattern C, inverted:

- (15)a. [tutel] [wat] [meiden] [of al þis ilke weane] (cmhali,156.411; m1)  
 little knows maiden of all this same affliction  
 b. but [not so easie work] [found] [Ethelfrid] [against another part of  
 but not so easy work found Ethelfrid against another part of  
 Britans...] (milton,X,149.73; e3)  
 Britons

Pattern C, uninverted:

- (16)a. and [þat land] [Brut] [zaf] [to Albanac his sone] (cmbrut3,12.315;  
 m3)  
 and that land Brut gave to Albanac his son  
 b. [Thes words] [the master] [took] [yl] (madox,141.417; e2)  
 These words the master took ill

The results of this search are as follows:

<b>me 1 (1150-1250)</b>	Pattern A	Pattern B	Pattern C
inverted: 76	2 – 2.63 %	48 – 63.16 %	26 – 34.21 %
uninv.: 17	2 – 11.76 %	8 – 47.06 %	7 – 41.18 %
<b>me 2 (1250-1350)</b>	Pattern A	Pattern B	Pattern C
inverted: 24	0	21 – 87.50 %	3 – 12.50 %
uninv.: 11	4 – 36.36 %	5 – 45.45 %	2 – 18.18 %
<b>me 3 (1350-1420)</b>	Pattern A	Pattern B	Pattern C
inverted: 33	1 – 3.03 %	21 – 63.63 %	11 – 33.33 %
uninv.: 22	6 – 27.27 %	8 – 36.36 %	8 – 36.36 %
<b>me 4 (1420-1500)</b>	Pattern A	Pattern B	Pattern C
inverted: 18	1 – 5.56 %	11 – 61.11 %	6 – 33.33 %
uninv.: 6	0	4 – 66.66 %	2 – 33.33 %
<b>e 1 (1500-1570)</b>	Pattern A	Pattern B	Pattern C
inverted: 3	0	3 – 100 %	0
uninv.: 3	1 – 33.33 %	1 – 33.33 %	1 – 33.33 %
<b>e 2 (1570-1640)</b>	Pattern A	Pattern B	Pattern C
inverted: 0	0	0	0
uninv.: 10	3 – 30.00 %	5 – 50.00 %	2 – 20.00 %
<b>e 3 (1640-1710)</b>	Pattern A	Pattern B	Pattern C
inverted: 1	0	0	1 – 100 %
uninv.: 3	2 – 66.67 %	1 – 33.33 %	0

Table 3: Stress pattern types throughout time (bare demonstratives excluded)

As can be seen, examples of Pattern A in Middle English are in general rare—which is what we expected according to the TR. The uninverted Pattern A becomes more common in Early Modern English. A possible reason can be stated as follows: Inversion as a method to avoid violation of TR works only as long as V2 word order is still available. Once this is no more the case speakers of English must employ other strategies, including the last resort strategy of inserting an empty timing slot.

The most common pattern is B with inversion. Most cases have the second accent on the subject since this is in most cases the variable of the open proposition. If there were no inversion in these cases this would thus lead into conflict with the TR.

The rate of inversion in these sentences shows also a pattern which can be expected taken the TR is at work: The rate of inversion of sentences which have the second accent on the subject should be significantly higher than the inversion of sentences which have the second accent on the verb (a case which is in general much less common). That is because, if the second accent falls on the subject, inversion is a good strategy to avoid accent clash. If it falls on the verb however, inversion would actually produce accent clash and should be therefore avoided in these cases.

The necessary calculation, taken the data from table 3, reveals that this prediction indeed comes true. The rate of inversion in these sentences remained (surprisingly, perhaps) relatively stable throughout the Middle English period (I did not take Early Modern English into account), therefore I felt justified in conflating the 4 Middle English periods, in order to obtain a larger database. What is most important is that the rate of inversion is very high in cases where the second accent falls on the subject, whereas in cases where the second accent falls on the verb, the rate of inversion is rather low.

	2 <sup>nd</sup> accent on subj. iBinv./Binv.+Auninv.	2 <sup>nd</sup> accent on verb Ainv./Ainv.+Buninv.	Comparison data Cinv./Cinv.+Cuninv.
numbers	101/113	4/29	.46/65
<b>% inverts.</b>	<b>89.38</b>	<b>13.79</b>	<b>70.77</b>

Table 4: Rate of Inversion (bare demonstratives excluded)

This shows rather clearly that the TR is indeed an important factor in the production of sentences with topicalization, and is indeed triggering the choice between the uninverted and inverted grammar.

### 3.3 Further confirmation: Demonstratives and the TR

One might ask further questions, for instance, whether topicalized constituents really always bear accent.

There is indeed a small group of cases where, at least in modern German, the topicalized element is deaccented:

- (17) a. Das **bemerkte** Charlie Brown und *schlich betrübt* nach Hause.  
That noticed Charlie Brown and crept gloomily to house.  
b. Das **hörte** König Arthur und griff die Ritter **an**.  
That heard king Arthur and assaulted the knights (prev.).

If we confine ourselves to cases with full verbs, these cases have three properties: The topicalized object is a bare demonstrative, which resumes the previous discourse, the verb is a verb of perception and bears focal accent, and the second clause expresses the reaction of an experiencer.

Similar cases appear in the corpus as well:

- (18) *(The kyng was at London whan sche entred, and axed of þe cyté help for to make resistens ageyn þe qween. Thei answerd þat þe qween and þe prince should be receyued as good zelatoris of þe rem. Oþir, þat were proued tretoures, schuld be received þere. And as for hem of þe cite, þei wold kepe her old pryvylege þat þei schuld go no ferþer to fite but þat þei myte com hom þe same day.)*

This **heard** þe king,  
(and **stuffed** þe Tour with vitaille and armour.) (capchr,152.3553-3559; m4)

In the corpus deaccenting of topicalized objects is confined to bare demonstratives. So, if the calculation were made separately for bare-demonstrative objects (which I excluded from tables C and D), there should be more (apparent) violations of TR, especially more inverted pattern-A-cases.

This prediction comes true, as can be seen from table 5.

	2 <sup>nd</sup> accent on subj.  Binv./Binv.+Auninv.	2 <sup>nd</sup> accent on verb Ainv./Ainv.+Buninv.	Comparison data  Cinv./Cinv.+Cuninv.
numbers	65/73	7/10	21/24
% inverts.	<b>89.04</b>	<b>70.00</b>	<b>87.50</b>

Table 5: Rate of inversion with bare demonstrative objects.

Since consequently with bare demonstratives as topicalized direct objects it is not certain whether they are accented (and thus potential conflict cases for the TR) or not, it is legitimate to not take them into account.

#### 4 Conclusions

Returning now to the main question B, I can attempt to give some answers.

There is a connection between the existence of the V2-constraint and topicalization: V2—that is to say, inversion—can be used as a ‘cheap’ way to fulfil the TR in cases where the fulfilment of the TR is jeopardized, as is the case in sentences with a topicalized constituent.

There is a causal connection between the decline of topicalization and the loss of the V2-constraint: Inversion can be used as a method to avoid accent clash only as long as it exists as an option in the language. From that follows that the continuous decline of topicalization over the Middle English period reflects the fact that V2-word order became more and more marked and was therefore used less and less often. So speakers of English increasingly avoided topicalization, since this construction involved usually inversion (as is shown by the stable high rate of inversion in topicalized sentences—cf. table 3), instead of the other possible solution of the problem, viz. continuing to topicalize and employing the—computationally presumably more expensive—last resort strategy of inserting an empty timing slot between the clashing accents.<sup>7</sup> Once inversion has finally disappeared as an option, speakers have to use in the residue of topicalized cases the last resort option of inserting an empty timing slot—as they do in Modern English.

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<sup>7</sup>It should be noted that of course the tendencies in a corpus of written texts do not reflect directly what went on in the spoken language. But they can serve as *terminus ante quem* (or rather *terminus post quem non*) of certain developments and thus can reflect at least indirectly—possibly filtered, retarded and slightly distorted—processes in spoken language.

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